Amendments to the Claims

Amend claims 1, 10, 13, 16, and 19 as follows:

1. (Currently Amended) A computerized simulation system for simulating an integrated circuit, wherein the simulation system uses a black box circuit model of the integrated circuit such that the integrated circuit details are hidden from a user, comprising:

a simulator module comprising an API wherein said API comprises at least one function and wherein said simulator module uses said function to define a component of the black box circuit and its corresponding simulated behavior; and wherein said function is recorded as a recorded function and said recorded function, when called during a simulation, reproduces a behavior corresponding to the black box circuit;

a code module which is formed from a compiled plurality of recorded functions ~~which is created by a program compiler, which compiles a plurality of recorded functions to form the code module,~~ wherein the code module makes calls to the simulator module during simulation of the black box circuit; and

an interface between said code module and a user program wherein a user defines said code module inputs, outputs, and load parameters, and wherein ~~the user is prevented from supplying inputs, output, and load parameters directly to the simulator module~~ the internals of the black box circuit are hidden from the user.

2. (Canceled)

3. (Canceled)

4. (Previously Presented) The computerized simulation system of claim 1, wherein the interface between the user program and code module includes a static load model.

5. (Previously Presented) The computerized simulation system of claim 1, wherein the interface

between the user program and said code module, includes a dynamic callback function which defines the load parameters.

6. (Canceled)

7. (Previously Presented) The computerized simulation system of claim 1, wherein said code module is compiled into a library.

8. (Previously Presented) The system of claim 7, wherein said code module further comprises a dynamically loadable library having at least one instantiation of said function.

9. (Canceled)

10. (Currently Amended) A method of modeling an integrated circuit as a black box circuit so that the integrated circuit details remain hidden ~~then simulating the integrated circuit using the black box circuit model~~ comprising the steps of:

providing a simulator module comprising an API having a plurality of functions;

defining a black box circuit by executing said functions;

recording a plurality of said functions used by said simulator module during said step of defining said black box circuit to create a plurality of recorded functions;

compiling said recorded functions together to create a circuit code module, wherein the code module makes calls to the simulator module during operation;

adding an interface to said code module which provides access to said code module from a user program;

linking said compiled code module to a circuit simulator;

assigning inputs, outputs and load parameters to said code module ~~by calling said code~~

~~module through said interface;~~ and

simulating the integrated circuit using the black box model of the integrated circuit.

11. (Canceled)

12. (Previously Presented) The method of claim 10, further comprising the step of compiling said recorded functions into a library.

13. (Currently Amended) The method of claim 10, wherein said step of assigning said parameters to said code module comprises the step of the interface providing a call-back function which reflects a predetermined load-modeling.

14. (Canceled)

15. (Canceled)

16. (Currently Amended) A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for modeling an integrated circuit as a black box circuit such that the integrated circuit details remain hidden from a user during simulation; the method steps comprising:

providing a simulator module comprising an API having a plurality of functions;

defining a black box circuit by executing said plurality of functions;

recording said plurality of functions into a plurality of recorded functions used by said simulator module during said step of defining said black box circuit;

compiling said recorded functions to create a code module, wherein the code module makes calls to the simulator module during simulation;

adding an interface to said code module which provides access to said code module from a user program;

linking said compiled code module to a circuit simulator; and

assigning inputs, outputs and load parameters to said code module ~~by calling said circuit code module through said interface~~; and

simulating the integrated circuit using the black box model of the integrated circuit.

17. (Canceled)

18. (Previously Presented) The program storage device of claim 16, wherein the method steps further comprise the step of compiling said recorded functions into a library.

19. (Currently Amended) The program storage device of claim 16, wherein said step of assigning said parameters to said code module comprises the step of the interface providing a call-back function which reflects a predetermined load-modeling.

20. (Canceled)

21. (Withdrawn) A behaviorally equivalent circuit for modeling and simulating an original circuit comprising:

a first current source, wherein said first current source is dependent on a first input and a first output and is coupled to said first output;
a first passive element coupled to said first input;
a second passive element coupled to said first input and said first output; and
a third passive element coupled to said first output.

22. (Withdrawn) The circuit of claim 21, wherein an internal impedance block which equates to an internal impedance of said original circuit, is coupled to said first output.

23. (Withdrawn) A methodology for modeling and simulating a circuit comprising:

providing a table of element values;
providing an ODE;
providing an ODE solver, wherein said ODE solver comprises an input voltage, output loading, and element values; and

Solving said ODE, wherein the results comprise an output voltage.

24. (Withdrawn) The methodology of claim 23, wherein said element values are dependent on said input voltage and said output voltage.

25. (Withdrawn) The methodology of claim 23, wherein the method comprises an additional step of filtering said element values.

26. (Withdrawn) the methodology of Claim 23, comprising an additional step of providing an interpolator coupled to said table of element values and said ODE solver, wherein said interpolator creates interpolated element values from said element values, said input voltage, and said output voltage.

27. (Withdrawn) the methodology of Claim 23, wherein said table of element values comprises arguments to a function wherein said function output provides said element value.